PHYSICAL TRAINING AS MENTAL TRAINING

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THE first duty of a people is to provide for the health of its children. The possible human value of any country fifty years ahead depends chiefly upon what is done by and for its children. They are the future in the making.

History seems to justify the statement of Professor Tyler[1] that conquering races have been physically strong races, and that nations have failed when they became degenerate.

Dionysius, speaking of the advantage of virility in a nation, said,

> It is a law of Nature common to all mankind, which no time shall annul or destroy, that those who have more strength and excellence shall bear rule over those who have less.

This law applies equally to individuals. Skill, cunning and reason play their part, but the animal quality of endurance is always back of these and is often decisive in a contest.

Darwin said he had difficulty in applying the law of the survival of the fittest to the facts of the destruction of Greece until it occurred to him that in this instance the strongest was the fittest. Civilized people's have been destroyed by ruder races that were physically superior.

The children that are now in our schools will take to adult life such foundation as heredity has furnished, with the equipment that society may care to add. We of this day have no greater obligation than to prepare these children mentally and physically for the duties that maturity may bring. Man did not escape the physical necessities of the body when he became civilized; the advantages of health are as great to-day as when our forebears lived in tents. Very few of the primitive man's activities are left; what he did regularly and from necessity we do incidentally, and usually for sport, and yet the demands upon the energies of man have not been lessened, they have only been changed in form.

Our educational authorities, though in many instances interested in physical development of the young, have not given the subject the important place in their program that it deserves. This is not wholly due to indifference, but largely to their ideals that were derived from classical-ascetic standards.

[1] Growth and Education," J. M. Tyler.

In the medieval ideal the human body was animal and sinful, to be despised and repressed. The mind was said to be the spiritual element in man, representing the immortal part of his nature, and therefore was the only part worthy of attention in an educational system. From the fall of the Roman empire to the later nineteenth century this ideal dominated education.

The medieval universities, including Oxford and Cambridge, provided only for mental training. Their education was intended for those who were to follow the professions or to become scholars or gentlemen of leisure. Education was not intended to prepare the great mass of men for the every-day work of life.

While only indirectly related to my subject, it is interesting to recall that there was in this country in the early nineteenth century much opposition to the establishment of common schools for the masses. It was claimed that those who belonged to the working classes did not need to be educated. Our own colleges and universities were originally founded on the old classical-ascetic model, so that the spirit of the medieval period survived in the educational plan of this country. It is only in recent decades that these institutions have begun to depart from the older, formal, classical methods that made education a privilege of the few, the average man being deprived of the advantages of the training that he needed. Because of this the humble millions of men and women who wove and spun, and fed and housed the world were left out of the educational scheme.

Some years ago a London weekly paper, which speaks for the conservative class of England, in discussing certain suggested innovations in English higher education, said that the great merit of education at Oxford and Cambridge was that it was "absolutely useless." By this it was probably meant that the education was for a chosen few, was not intended to prepare men for the practical work of life and was essentially and only an intellectual and cultural training.

The change of attitude that is seen in our day is due chiefly to two great discoveries: the re-discovery of the human body and its relation to our mentality and the discovery of the mind of the child and youth. We have found that man is an animal who graduated from caves and dugouts and to whom even barbarism was a late and great achievement. That the human body was made by the experiences of that rude life, and that since then we have made no change in it except to stand on two feet. Neither have we added one nerve cell or fiber to our brains since the day when the cave was home and uncooked food the daily diet.

The conception of man as an animal has led to a study of him as such. Educators as a class now concede that the physical man must be considered as an essential part of their scheme, that the brain is an

organ of the body among other organs, and is subject to the same laws and influenced by similar conditions.

The influence of the mind upon the body is a commonplace of psychology, but the influence of the body upon the mind is of equal importance, though less frequently emphasized.

Whatever one's theory of the nature of mind, it must be considered in relation to the brain as the organ of its expression. The mind has, too, a broader base than the brain, for every organ of the body has some share in the mental functions. Every physician knows that physical disease lowers the quality of the thinking and, with the exception of a few geniuses like Darwin and Leopardi, it makes impossible intellectual work of a high order. Disorders of the internal organs rob the brain of nourishment and weaken it, and by obtruding their morbidness upon it they batter down its resistances and lower the thinking power.

Though we can never know the history of man's origin, the lives of the child and of the wild man help us to understand something of the order of racial development. All the higher mental faculties grow in the child as they grew in the race—out of impluse, instinct, feeling; and from infancy to maturity we recapitulate mentally and physically the early human-making stages, short circuiting in twenty years the race-process.

The life of physical activity that the child leads develops and coordinates the brain and the muscular system. In this way the great motor functions are organized in the brain and become part of the physical basis of mind.

The older education that trained the intellect exclusively, without reference to the practical demands of life or the needs of the body, was inadequate in that it ignored the law of thinking and doing. It is true that there is much to its credit, as many fine spirits have testified. They at least survived it.

Stanley Hall says "we think in terms of muscular movement," and this expresses the most important single fact in the mature mentality. That the mind is largely constituted of memories of muscular movements is basic in development.

The muscles are the special organs of volition, the one part of the body that the mind can directly command and act on. The muscles are preeminently the mind's intruments, the visible and moving part of its machinery. They are thought carriers, and during the growth period their functional activities are organized into the mental life. This is why "we think in terms of muscular movement," and why muscular training supplies a natural need of the developing mind.

The normal boy says little or nothing of what he thinks, but much of what he is doing or intends to do. He has the motor mind, the

instinct for doing things by which he builds the brain and body. It is nature's way of laying the foundation in the individual as by the more tedious process of evolution she laid it in the race. The mental development of the normal infant is indicated by the increasing accuracy and delicacy of muscular coordination. The feeble-minded child very early shows its mental defect in the clumsy use of its muscles. Because of the functional relation of the voluntary muscles and the mentality, physical training is in a large degree mental training. When by such training we give dexterity to muscles of the growing person we are making possible better mental development; that is, because of this relation of the mind to action there is a direct mental discipline in the thought-out processes of physical activity. If, then, we make physical development a part of our educational process, we are taking advantage of race tendencies, we are starting the individual as nature started the race; we are laying the foundation in the individual as it was originally laid in the race; we are building as the race built.

Exclusively intellectual training may be sufficient for the genius or for the few who have great initiative and intellectual self-confidence, but for the great mass of boys and girls this training is not sufficient. It does not prepare the young for the kind of work that three fourths of them will have to do. We are now beginning to recognize this and through manual training, vocational guidance, etc., we are teaching boys and girls how to do things, and this, too, has the additional merit of being, in a measure, physical training.

Educators, until recently, have, in emphasizing the paramount importance of mental training, lost sight of the needs of the body. Their classical ideals and formal methods made dead languages, mathematics, philosophy etc., the school diet of boys whose normal hunger was for action, and for learning by doing.

Sir William Hamilton, who wrote fairy tales in metaphysics for a generation of Scotchmen, placed these lines over the doorway of his lecture room.

> **In earth there's nothing great but Man;**
> **In Man there's nothing great but Mind.**

This sounds well, but it is poor philosophy. There is much in earth that is great besides man and much in man that is great besides his mind. The older type of metaphysician with his staggering vocabulary and his bag of "categories" has now chiefly a historic interest. In the modern view the interdependence of mind and body is a fundamental fact of life. As science reveals the physiologic marvels of the once despised body, the latter grows in our respect, for we find that its seeming humble functions are intimately related to our highest powers. Sir William's couplet gives a hint of the dominance of the classical method of his day. It overemphasized the importance of reason and

too often converted the youthful mind into a rag bag of useless information. The educators of that time and since have thought more highly of human reason than experience justifies. With their medieval bias for a world of will and reason, they drove the young with the whip and spur of emulation toward what to them seemed the one possible goal, intellectual achievement.

We exaggerate the share that reason has in conduct. In the history of the race, which is epitomized in the life of every individual, reason was a late outgrowth of feeling, passion, impulse, instinct. It was these older faculties that ruled the life of the primitive man who made the race, and it was through them that the race gradually rose to reason by what Emerson would call the "spiral stairway of development."

These functions of impulse and instinct dominate the life of the child and they are only a little less potent in the conduct of us grown-ups. Much of what we call reason is feeling, and much of our life activities are due to desire, sentiment, instinct and habit, which, under the illusion of reason, determine our decisions and conduct. Some one has said that reason is the light that nature has placed at the tip of instinct, and it is certainly true that without these earlier, basal faculties reason would be a feeble light. During the growing period these are specially strong, and the important thing is that they be guided and organized in relation to the needs of maturity. In combining mental and physical training we are in some measure furnishing this guidance, doing intentionally what nature did originally without design.

In the uncivilized state the stress of life was chiefly physical. The civilized man has to a large degree reversed this old order, in that the use of the body is incidental in his work, the stress being placed upon the brain. He piles his life high with complexities and in place of life being for necessities, and they few and simple, it is largely for comforts which we call necessities, and Professor Huxley has said that the struggle for comforts is more cruel than the struggle for existence.

This stress which is put upon conscious effort in civilization places a new and severe tax upon the brian. It intensifies and narrows the range of man's activities; it causes him to specialize and localize the strain to a degree that may be dangerous. It is certainly true that every man has his *breaking strain,* and there is nothing that will raise the limit of endurance like a strong and well-developed body.

The Italian physiologist, Mosso, showed by an ingenious device that when a person lying quite still was required to add a column of figures, blood left the extremities and flowed toward the brain. Any emotional state or effort of thought produces the same result. This demonstration that we think to our fingers' ends suggests the importance of a strong body as a prompt support in mental work.

All our work, mental as well as physical, is a test of endurance,

not a test that is spiritual and non-material, but even in the sphere of the mind it is plainly animal and physical. Thinking is primarily a physical process and draws upon the vital stores of every organ. The energy that makes clear thinking possible depends largely upon the vigor of the body, and to the extent that this fails, the brain functions suffer. Therefore, any work, mental or physical, will be better done and more easily done if the body is strong. Other things being equal, the intellectual work of the strong man will be better done than similar work by one of equal talent, but who is not strong.

Big muscles are not necessary in physical development. Many people are not designed for big muscles, and any attempt by them to produce a heavy, massive development may do harm. What is wanted is vigor, skill, muscular readiness and a reawakening of the old associations of thought and action. Such training goes further than thought and action, for it reaches all the organs and adds immensely to the vital capacity and working power of the individual.

The play instinct of the child is as old as the race, or older, and is a vitally important factor, not only in physical development, but also in mental development. In its destructive and disorderly activities the child shows the later adult forces in the formative stage. Old instincts and movements that were once self-preservative and of serious meaning to a wild ancestor reappear in the play of children, and, utilized wisely, may under new form become a valuable possession of the adult. There is a great big man, in fact, several possible men, inside every boy. Through his running, jumping, fighting, swimming, through impulse, instincts and emotions he is seeking the man that is in him, and it is by this turbulent and experimental course that he finally comes to the order of maturity.

Every boy is a vitally coiled up set of springs pressing to be released. Race-old energies are struggling in him for expression, and play is the normal way to satisfy the great demand. The child may miss some important things and yet get on, but it can not, without severe and lasting harm miss the instinctive activities of play.

In play and games the young are re-enacting these old muscular coordinations and developing mind and body on the old foundation. The boy's love of outdoor sports and the adventures of hunting are significant. Those ancestors of ours who hunted and fished and shaped with care their arrow heads were developing a manual skill and thinking power that we inherit. We use our muscles for more varied and possibly more finished purposes, but it is through the patience and practise of their rude lives that we possess the delicate uses of the hands and the finer dexterities of the mind.

The boy who goes whistling to the fields, or hunts, or fishes, or swims, is unconsciously reaching out toward later life and is preparing for serious and bigger things.

The growing formative period of life is the time for good physical development. Whatever is gained and fixed then is permanent, as it becomes a part of the physiological habits of the individual. The years before twenty decide the future energy stores, and the capacity to endure. Every function enlarged, every gain of power, is additional storage room for energy, to be drawn upon in the coming days of adult stress.

Good physical development not only gives strength and skill in the use of the body, but develops a physiological habit of surplus power that may be called quantity of energy. Life is not alone in quality, in delicacy of adjustment, in accuracy, in fineness of feeling; it is also in quantity. The poet who, with frail physique and feeble pulse, sits in his quiet retreat and puts his fine fancies into the rhythms of verse has quality. But in the stress and rivalry of life that awaits the majority of men, there is a need for quantity of energy, such as enabled a Washington or a Cæsar or a Napoleon or a Wellington to shoulder his way through difficulties. These men combined quality with quantity and this combination may make, and often does make, the life of masterful achievement. The quantity of energy in us average men may make the difference between success and failure.

Many men fail in life for lack of staying power, for lack of that kind of endurance that is furnished by having power in reserve.

The strong, confident person who has strength to spare, reserves of energy, does his work easily and without friction. Half the timidities and indecisions of men are chargeable less to lack of ability than to lack of the physical vigor, the *quantity* of energy, which is the driving power of character. In all the contests of life an important element in success is the ability to endure prolonged stress, to have the reserve energy that can be drawn upon and utilized as a driving force. This power is not alone necessary in the emergencies, the "short hauls" of life, but also in the long hauls that spread the strain through greater periods. Many of the failures of life are due as much to lack of ability to meet prolonged stress as to lack of experience or intelligence. Men of moderate ability but with great powers of endurance often succeed, while men of greater talent fail for lack of the ability to endure strain.

The man with a weak body and without the self-confidence that surplus energy gives is liable to be of uncertain judgment. Such a man in the presence of a problem requiring quick decision, doubts and hesitates and stands shivering on the brink of action while hastening opportunities pass him by.

Much of the loose thinking of our time is undoubtedly due to poor educational drill. In fact the failure of the schools to teach pupils how to apply the mind and how to think is one of their common reproaches.

Inability to use the mind effectively is also frequently due to a lack of vigor and physical stamina. A person with poor digestion, or underdeveloped body, or weak circulation has of necessity a badly nourished brain. Such a brain, unless it belongs to a genius, will do poor thinking.

The mentally trained person who is also physically strong has the combination that puts his powers at easy command. He can be joyously busy doing the impossible because the doing of it has been made easy by training.

How much native power there is in all of us that for want of proper training or sympathetic encouragement never comes to maturity! How many of the finer qualities of character that, for want of a kindlier climate of cheerful companionship and wise direction, failed to mature, and now lie dead in us! Very many people are only partly alive. A large part, and in some, the best part, is dead. The capacity they show is probably only a small share of a fine inheritance which, not knowing how to use, they allowed to die.

We have an instinctive liking for people who are strong and healthy. They appeal to us by their robustness and their confident display of energy. We do not now need the big muscles that were once necessary in wielding spear and battle-axe. We need, however, as much as the race ever needed well-developed bodies and habits of health.

It is not difficult for us to see that sports and games and play help to physical development, but it is not so plain that they may be made to develop the best qualities of character.

It is a fact, however, that all the important elements of character are tried out in games and sports. Enthusiasm, self-confidence, the adventurous spirit, alertness, promptness, unselfishness, cooperation, quick judgment—all these have their training and discipline on the game field. They comprise those fundamental native qualities that have gone to make humanity what it is. The young should have this training, and, if of the right kind, it may be made to contribute to the making of the best kind of character. The same quickness and accuracy of judgment that enable a boy to win a point in football may in later life be used to win a battle or save a business venture. Beyond this, there is of course gained the strong body that makes work easy and stress less difficult to bear.

Hall calls attention to the fact that two generations ago, Jahn, the great builder of German physique, roused the then despairing German nation by preaching the gospel of strong bodies. He created a new spirit in Germany, and the whole nation was aroused and seized with an enthusiasm for outdoor games and sports, and there arose a new cult for the body. His pupils sang of a united fatherland and of a

stronger race. The Germans are in the habit of reminding us that it was about one generation after Jahn that the German Empire was founded and Germany became a world power.

Every argument for the physical training of boys applies with equal force to girls. Women need to be physically as strong as men. No race will remain virile and progressive unless both the fathers and mothers have the physical stamina that produces healthy, vigorous offspring. In this age, when women are going out into the world to compete with men it is highly important that they be physically strong if they are to stand the stress successfully. It was from rough barbarians, the rude war-loving Teutonic men and women described by Tacitus, that the Anglo-Saxon race inherited those splendid qualities of mind and body that have made their descendants masters of seas and continents.

It has been objected that gymnastics and field sports make girls coarse and mannish. The exact opposite has been found to be the case. It has been observed in colleges that when young women are properly led, their sports, in place of making them mannish, have a marked refining influence. They care more for correct posture because this is made one of their tests in athletic sports. They develop better manners and a new sense of pride in their appearance. They soon learn to avoid slang, loud talking and boisterous behavior. In the University of Chicago where they have excellent training, many of the girls have said that they came to have a new sense of dignity and to care more for their personal appearance.

They also develop the finer elements of character, a cooperative spirit, obedience to commands, patience, self-confidence, a spirit of comradeship, a democratic attitude and an appreciation of good qualities in others wherever found. All of these esthetic, social and moral qualities, woven into the texture of the growing character, and with the vigorous health that the physical training brings, are the best contribution to the making of the most effective type of the womanly woman. All games and sports and athletics for the young should therefore make for refinement and esthetic development.

The state needs now, and will always need, men and women who have sound bodies and abounding energy.

The harsher phases of the human struggle may pass and wars may cease, but the old contests of races, nations and individuals will continue under other forms.

As the race grows older life will become more largely mental. The increasing complexity of human relations and the more delicate adjustments that these relations require will bring a new and finer social order that will make higher demands upon reason.

While there is no evidence that experience or time or training will ever change the structure of the brain, it is probable that we have as yet but imperfectly utilized our mental possibilities. Stratton says:

> Out of the depths of the mind new powers are always emerging.[2]

Back of the mental life, and making it possible, are the energies of the body, the functioning of the animal in man, which in the brain are changed to the higher uses of the mind. The ability to execute, to act effectively, to do and keep doing, to do the work of the professional man, the banker, or the scientist, all this is primarily physical, and from top to bottom of man's activities the physical test is applied. With the mental and emotional strain of civilized life goes the physical strain which is the other half of the struggle, and which now and always is both mental and physical. The Greeks recognized this unity of mind and body twenty-five hundred years ago and their results remain unmatched by any race.

They saw that the *thought-out movements of physical training* resulted in mental training and this law of mental development through physical training was a fundamental principle in their educational plan.

The nation that will again make this an ideal will produce a finer race of men, and other things equal, will excel in all that makes a people great.

[2] "Experimental Psychology and Culture," George M. Stratton.